FINAL REPORT

19960308

CROPS PROCESSING DEVELOPMENT CENTRE: FACILITY UPGRADES TO ENABLE DEVELOPMENT AND PILOTING OF MEDIUM TO LARGE SCALE NON-FOOD(FEED AND AGRO-FIBRE)

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Funded by the Agri-Food Innovation Fund

Prepared by: PAMI

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Final Report

Crops Processing Development Centre Facility Upgrades To Enable Development and Piloting of Medium to Large-Scale Non-Food (Feed and Agro) Fibre

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Acknowledgement

PAMI wishes to acknowledge the funding support provided by the Agri-Food Innovation Fund of the Saskatchewan Department of Agriculture and Food.

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1. Introduction

Agri-Food Innovation Fund (AFIF) has provided Prairie Agricultural Machinery Institute (PAMI) with funding to construct and equip a Crops Processing Development Centre (CPDC). The project is complete, all funds have been utilized, and the CPDC is operating as intended. A final report for this project follows.

2. Equipment Purchased

Invoices for all purchases have been forwarded to AFIF. A summary of all purchases is given below.

Item	Amount	Description
Building	975,777.34	General contractor, project management
Support Equipment	160,743.56	Dust control, boiler, bins, VFDs, air compressor
Processing Equipment & Accessories	182,852.79	Dryer, blow deck, conveyor, motors, telehandler
Fabrication Equipment	57,039.56	Brake
Environmental Chamber Upgrade	12,941.25	Portion of Environmental Chamber upgrade
Data Acquisition Equipment	10,645.50	New data acquisition equipment
Total	**$1,400,000.00**	

The building and support equipment are complete and are providing PAMI with a facility that is well-suited for dirty processing types of projects, and other projects that require the infrastructure built into the facility. Some of the processing equipment has been used for crop processing projects, and other equipment has been purchased for future projects. The fabrication equipment is helping PAMI better serve all of its clients in prototype fabrication projects, and the data acquisition equipment is also being used on processing projects. PAMI is upgrading its Environmental Conditioning Chamber for controlled environment tests and crop material conditioning, and the funds from this project are a contribution towards this upgrade.

3. CPDC Clients To Date

PAMI has also done crop processing projects in the CPDC. These projects are listed below. Because of confidentiality concerns, some of the clients' names and the exact project nature cannot be revealed.

a) Client A, Pulse Crop Processor

Project:	Investigate methods to improve pulse crop processing
Amount:	$30,750
Expected Impact:	Improve process efficiency and product quality

b) Agriculture Development Fund

Project:	Using Dockage Pre-Cleaners to Add Value to Grains
Amount:	$58,224
Expected Impact:	Make better use of pre-cleaners to increase producers' net returns.

c) Client B, Agricultural Machinery Manufacturer

Project:	Conveyor Capacity Comparison Tests
Amount:	$4,986
Expected Impact:	Improved conveyor capacity and efficiency

d) Maple Ridge Farms, Essential Oil Processor

Project:	Essential Oil Extractor Optimization
Amount:	$147,106
Expected Impact:	Increased efficiency and capacity for essential oil extraction from seeds

4. Future Clients

PAMI is actively seeking new clients in the crop processing area. The types of clients that have expressed interest in working with PAMI includes a fibre processor, Alberta Research Council, and two alfalfa processing organizations.

5. Acknowledgements

PAMI has done the following to acknowledge AFIF's contribution to this initiative.

a) Erected a sign near the CPDC building, which includes the AFIF logo and acknowledgement of funding;

b) Presented a project summary at the AFIF conference in November 2000;

c) Acknowledged AFIF's contribution in:

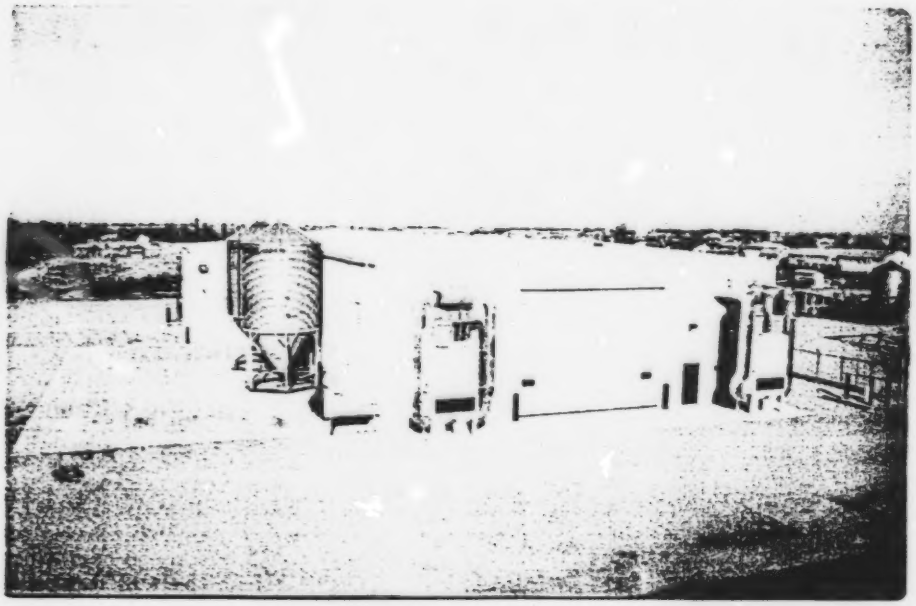
- Presentation to Humboldt Town Council,
- Presentation to Alfalfa processors' seminar,
- Trade show display booth,
- Presentation during a meeting to set CPDC direction,
- PAMI's web page,
- PAMI's annual report.

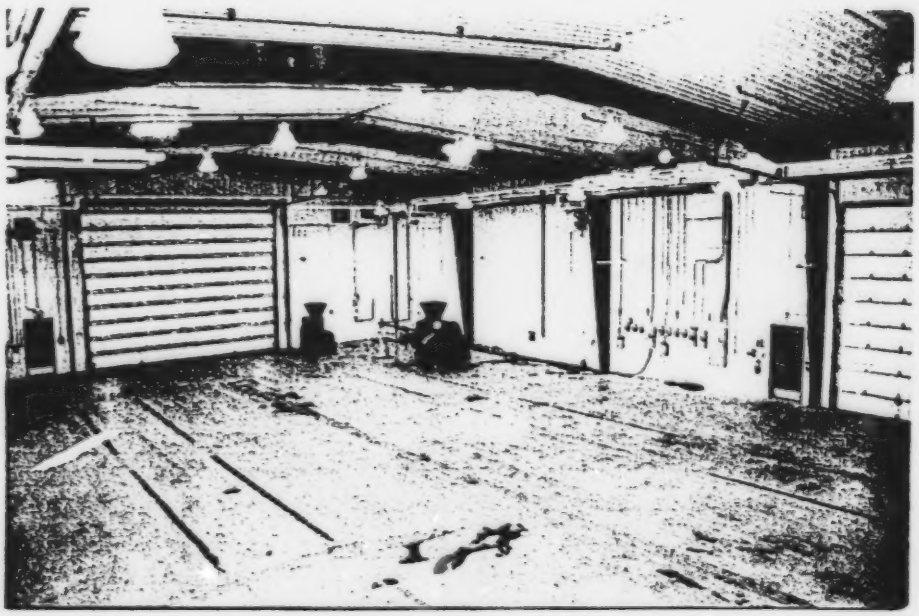
Photographs of the CPDC, as well as copies of press releases and other printed material are included in **Appendix I**. Also included are conclusions from a meeting held in October 199 in which input for the CPDC initiative was gathered from several organizations and people. An attendee list is also attached.

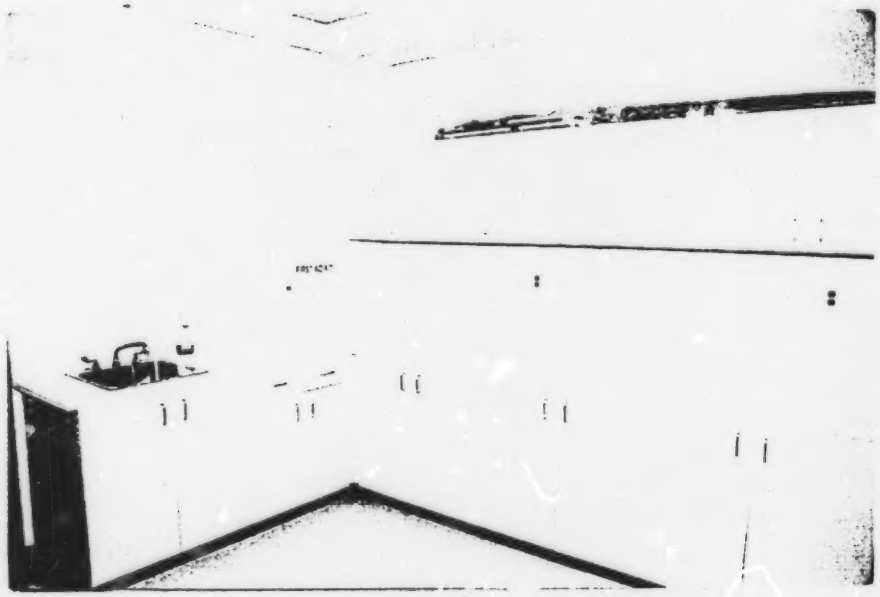
APPENDIX I

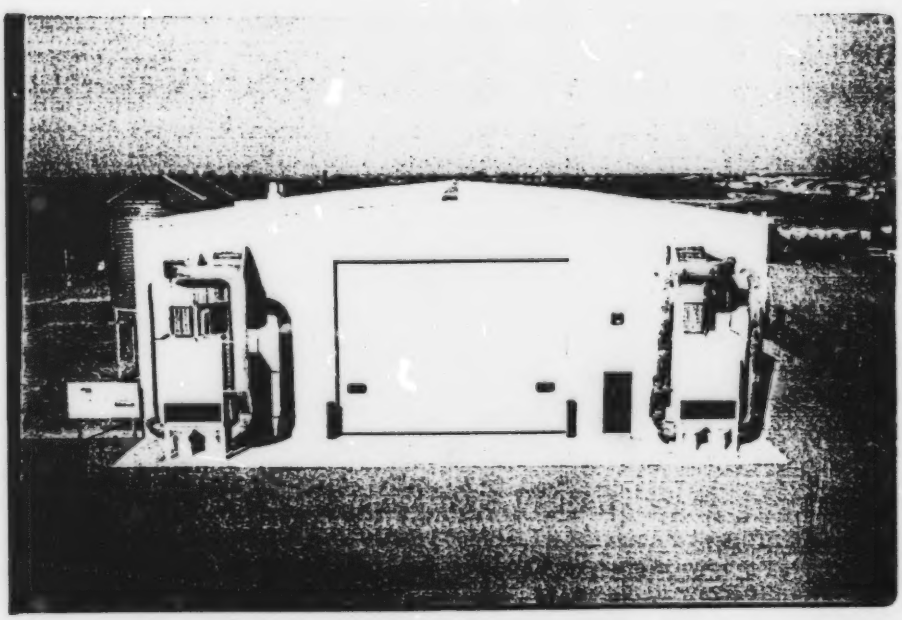
Appendix I

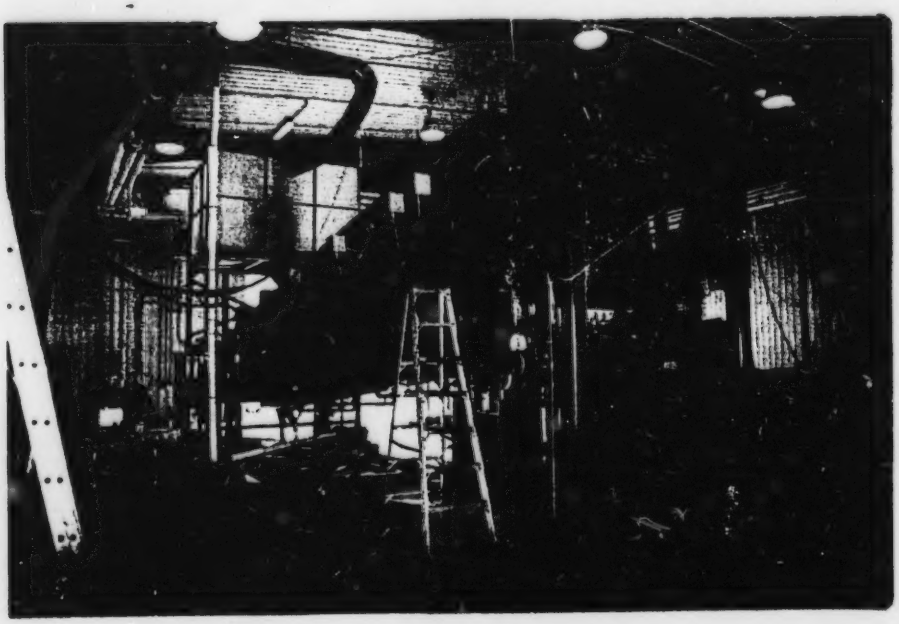
Project Photos

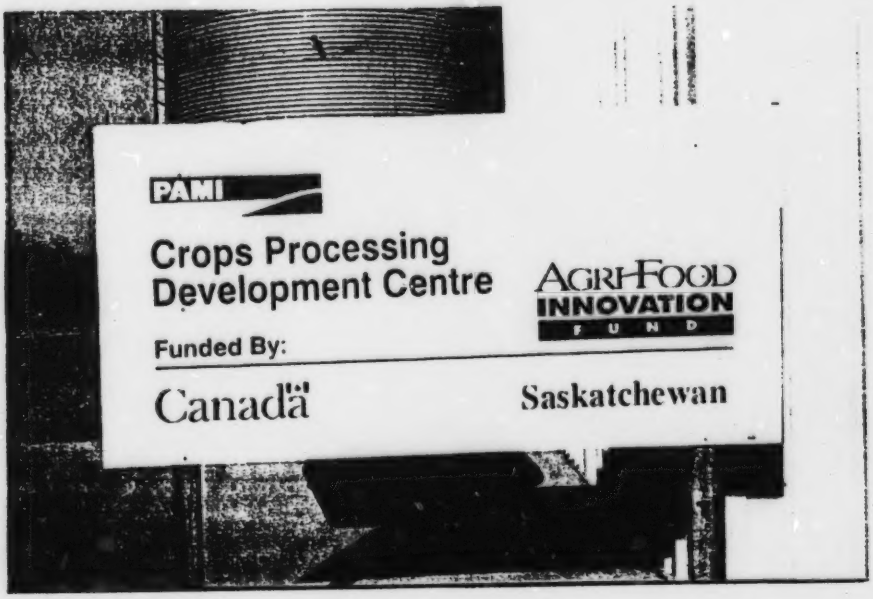











PAMI
Crops Processing
Development Centre
AGRI-FOOD
INNOVATION
FUND
Funded By:
Canada
Saskatchewan

Innovation Fund Acknowledgement

1. PAMI News Release, April 16, 1999.
2. Maple Ridge News Release, March 20, 2000.
3. PAMI Crops Processing Development Centre, November 16, 2000.
4. Forum Report: Growing a Value-added Crops Processing Industry in Saskatchewan, March 1, 2000.
5. PAMI excerpts from *PAMI News*, June 1998, and *R & D Report*, April 1998.

PAMI RELEASE

16 April 99
Humboldt, SK
Immediate Release

Grain Pre-cleaners Could Boost

Crop Value for Producers

Saskatchewan Agriculture and Food (SAF) Minister Eric Upshall today announced that the Prairie Agricultural Machinery Institute (PAMI) will receive $58,224 from the Saskatchewan Agriculture Development Fund (ADF) to examine the economics and performance of pre-cleaners for grain. The results will be available to producers to help them make selection and operation decisions.

"There are relatively low cost cleaning units available that producers can use to pre-clean grain as they are emptying or filling bins, or during harvest," says PAMI Engineer Darrell Lischynski.

While the units are commonly used in corn country, Lischynski says the economics and performance of the machines in traditional Western Canadian grains is unknown.

There are several potential advantages, says Lischynski. The pre-cleaners can help remove debris from grain, which can make aeration and therefore drying more efficient. The retained screenings may also be used as feed by livestock producers. Finally, Lischynski says the pre-cleaners might even be able to increase the grain quality a grade level by reducing dockage at the elevator.

"But all these potentials are unknown," says Lischynski. "It's important to take a hard look at the performance of these units in our conditions and in our grains," he said, adding that it's equally important to then inform producers about the abilities and economics of the technology.

SAF Minister Eric Upshall said that Saskatchewan remains the bread basket of Canada and much of the world. "We need to continue to find ways of making traditional grain production more efficient, and PAMI has the technical expertise to help producers make meaningful efficiency decisions in their operations."

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MAPLE RIDGE FARMS INC.

NEWS RELEASE:

PAMI

Farm Diversification File

20 March 2000
Humboldt, SK
Immediate Research Release

Essential Oils Markets: Huge Ag Potential for Saskatchewan

Deputy Premier and Minister of Saskatchewan Agriculture and Food Dwain Lingenfelter announced $370,000 in repayable financial assistance today for Prince Albert area farmer Martin Gareau to develop an essential oil extractor that will help Gareau increase sales of essential oils for markets in the US and Europe.

The manufacturing scale machine will be built by Precision Industrial Limited of Prince Albert, and is based on a pilot scale prototype first designed by Gareau himself. Engineers at the Prairie Agricultural Machinery Institute (PAMI) will test and evaluate the machine to optimize its production capacity, before placing the machine into production.

Lingenfelter said "Farm commodity diversification and value-added processing is the future of agriculture in Saskatchewan, and Mr. Gareau is one of the many innovative producers leading the way."

Essential oils from spice plant foilage and seeds are increasingly being sought after as natural flavourings in foods and beverages, and natural fragrances in cosmetics and toiletries, says Gareau. He cites a recent Flavours and Fragrances marketing group study reporting annual sales of $1.1 billion in the US market alone for natural food flavourings. Other markets include fragrances for cosmetics and toiletries ($900 million annually) and flavours for beverages ($400 million annually).

Driving Gareau's pursuit of this industry is a quote from the marketing study: "Flavourings allowing foods to be marketed as 'all natural' continue to see strong demands." Gareau backs up this statement citing his seven years of experience and strong sales record of essential oils into US markets.

More recently he's begun exporting product to Europe, noting that market's preference for something he calls "the northern vigour advantage", referring to the cool nights and long summer days on his northern Saskatchewan farm which results in increased production volume as well as intensified flavours and aromas.

Additional benefits of essential oils are anti-microbial agents that enhance shelf life and present a health advantage when transferred to food for human consumption.

But meeting sales demands means increasing production, and for that to happen Gareau needs an industrial scale oil extractor that will pull essential oils out of foilage and seeds. "This start-up loan is really going to help make things happen," says Gareau.

"Every day now I see more and more potential for diversification in the food industry. Saskatchewan has tremendous untapped potential to be selling into these markets. For me, being innovative means seeing beyond supply and demand, and always focusing on 'what's next?'," he adds.

As for PAMI's role, President and CEO David Gullacher says, "PAMI has a demonstrated commitment and a record of performance in helping producers overcome technical production hurdles in both traditional and specialty crop production. We are looking forward to working with Mr. Gareau in perfecting his concept."

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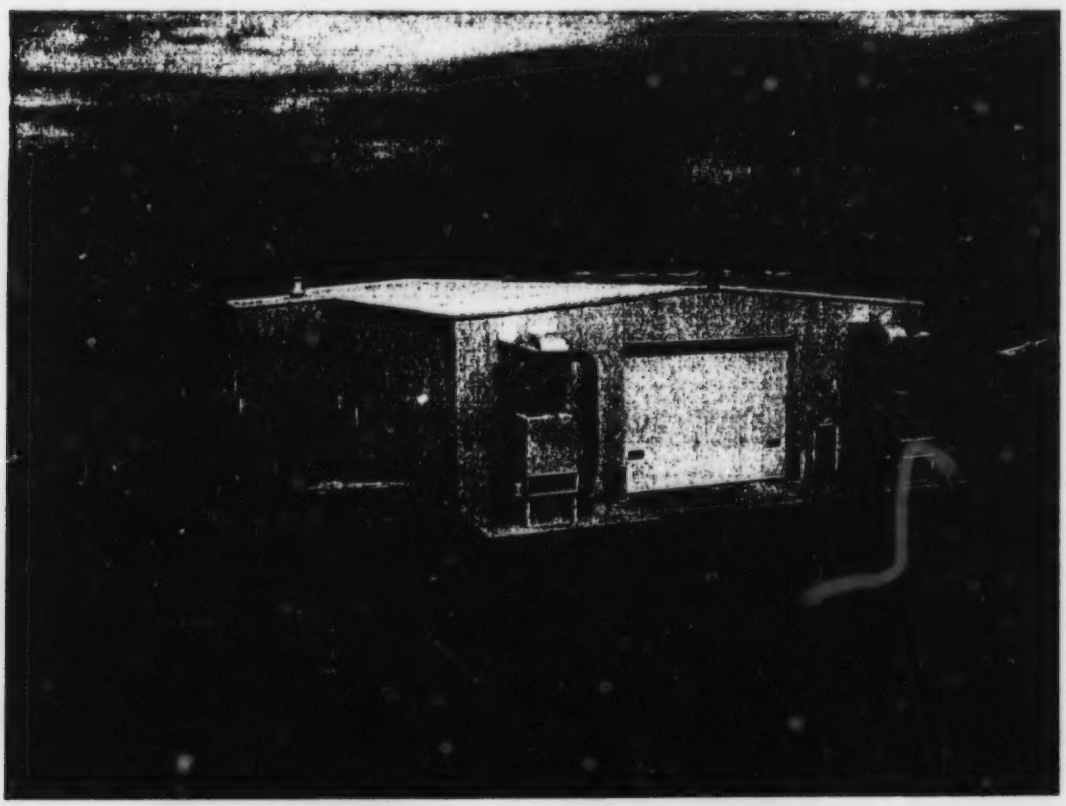
Crops Processing Development Centre

PAMI's Crops Processing Development Centre

The Humboldt station of the Prairie Agricultural Machinery Institute (PAMI) built a new Crops Processing Development Centre (CPDC) in 1998. The concept for this facility was developed in cooperation with the Agriculture and Bioresource Engineering Department of the University of Saskatchewan and POS Pilot Plant Corporation. The facility was constructed and equipped under funding by the Agri-Food Innovation Fund and the Strategic Initiatives Fund.

The CPDC is located at PAMI's Humboldt station just north of the present main building. It consists of a 70' x 115' heated test building and an attached 70' x 70' unheated area to store crop materials and equipment. The test building has an interior liner to aid in cleanup, a 600 V three phase electrical service, a boiler for process steam generation, and a dust control system. An outdoors-concrete pad is adjacent to the test building. Materials handling equipment, such as conveyors and a front end loader, are a part of the facility, as well as equipment for conditioning crop products prior to testing. Besides the cold storage building for storing baled or other bulk materials, there will also be bins available for storing granular products. Some basic processing equipment, such as a tub grinder, a pelleter, and a hammermill will also be included in the facility. The fabrication equipment in the main PAMI building has been upgraded to enhance the ability to build prototype machinery.



Past Projects

PAMI has done several projects in the crops processing area. These include an investigation of options for long hauling cereal chaff for ethanol production, and the development of a washing system for quinoa processing. PAMI has also worked with a system for primary processing of crop fibres, and has done a project on wild rice maturity sorting. Testing was also done to optimize the quality of a dehydrated alfalfa product, as well as a study of several different methods for collecting crop materials for central processing.

PAMI's strength is in field testing and applied research. Its staff of 43 professional and technical personnel bring a wealth of knowledge in field data collection, experimental design, and practical problem solving for clients.

Future Projects

The focus of the CPDC will be in maximizing the utilization of crop materials for feed, fibre, and fuel use. The types of projects that will be pursued will include crop material harvesting and collection, crop residue collection, and crop material transportation, as well as the primary processing of these crops. Other types of projects will include primary feed processing or transportation optimization, or finding new uses for prairie crop materials. Specific examples of the types of projects that PAMI will be pursuing for the CPDC will include the following:

- ***straw collection machinery development***
- ***straw densification and size reduction studies***
- ***feed processing quality improvement tests***
- ***straw storage studies***
- ***in-field silica removal from straw***
- ***in-field fibre separation***
- ***development of whole crop harvesting methods for oilseeds***
- ***refinement of the stripper header harvesting system for straw collection***
- ***optimization of straw collection scenarios for central processing***
- ***optimization of field drying vs. dehydrating alfalfa for cube quality and throughput***
- ***efficient methods to sort fibre particles by size***

Clients

The CPDC will give a critical advantage to Saskatchewan's processing companies in providing a secure, fully equipped, working-plant environment wherein to carry out applied research on experimental work, or to produce product runs for market test purposes. Start-up companies will depend on the Centre to provide them with working-plant facilities without the up-front capital cost. Mature organizations will depend on the Centre to help them experimentally develop new products and processes without disrupting their production facilities. This work is expected to help industries create $84 million in sales and 350 jobs over a 7-year period.

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Revised: November 16, 2000
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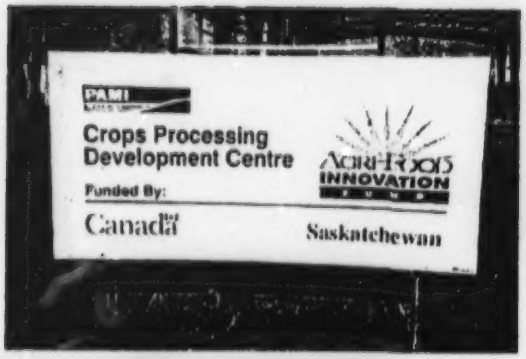
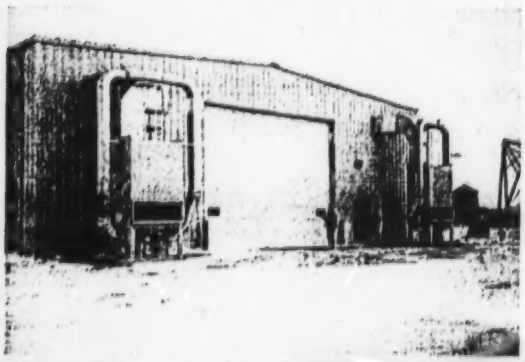
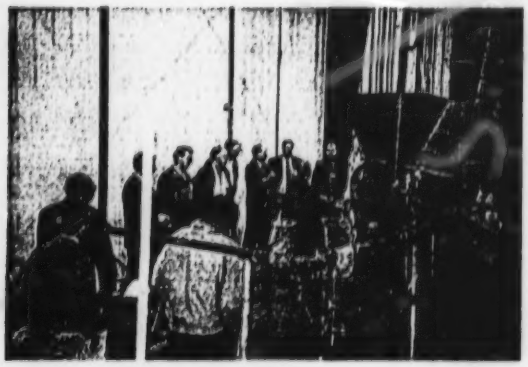
Forum Report: Growing a Value-added Crops Processing Industry in Saskatchewan







Stakeholders Report

March 1, 2000

Meeting Date: October 28, 1999

PAMI
Prairie Agricultural Machinery Institute
Applying Technology for Agriculture

Introduction

On October 28, 1999, stakeholders and industry builders representing private sector, university, economic development, and provincial and federal agriculture groups met together at PAMI to discuss the future of Value-added Crops Processing in Saskatchewan economy (participant list attached). The discussion focussed on how PAMI's new Crops Processing Development Centre (CPDC) might fit into an overall strategy to help farm producers and industry diversify the agricultural economy in Saskatchewan.

Executive Summary

The active participation of all who attended proved fertile ground for discussion, provided new information, and generated some fresh ideas. The Forum was split into the following discussion topics:

- Feedstocks (to determine what feedstocks would be important in the future)
- Markets (to determine what the marketplace might be demanding in the future)
- Process Opportunities (to determine what types of processes the CPDC should incorporate)
- Champions (to identify potential champions in the crops processing industry)

Flax emerged as a clear priority for further value-added feedstock development. The group considered environmental issues and the livestock industry as key market drivers. Animal feed and fibre processors surfaced as industries presenting the greatest process opportunities. The group recommended the selection of an individual with a proven record of success or a small, committed group to champion the value-added feed and fibre processing industry in Saskatchewan.

PAMI wishes to thank all the participants for their time and input.

Feedstocks

Underutilized straw and chaff from crops currently grown emerged as the feedstocks that PAMI should concentrate on in the short term. The most important in the near future will be flax, wheat and barley straw. The elimination of wheat subsidies will influence what volumes are grown, but not eliminate the need to maintain traditional cereals and grasses as an agronomic necessity for crop rotation and soil management needs.

Flax, with its strong and lightweight fibre, was earmarked as having the greatest potential as well as a negative value if not taken off the field or burned. Flax chaff and screenings were especially noted as a very good raw product for feed.

Complete Crop Utilization: *There was general consensus that straw burning would soon be outlawed, subsequently creating a demand to use it more productively. Efforts should be made to utilize the whole plant—not just the seeds or the seeds and the straw only. In the long term, increased demand for straw may require plant breeders to develop long straw varieties—contradicting current producer demands for shorter straw varieties.*

Alternative Crops for Alternative Uses: *Potatoes can be grown for industrial starch purposes. The contract production of specialty crops such as malting barley, hemp, flax, is increasing, potentially presenting a need for specialized processing technologies. Potential crops production for energy use should not be ignored. The time is ripe to investigate other crops (example: switchgrass) that may fit the Saskatchewan growing environment and fill the void left by reduced wheat production. Hemp is a questionable feedstock, except where specific contracts exist.* Regulations prohibiting hemp production in

the US are a barrier to as yet unestablished but potentially significant markets that need to be overcome before processing technology becomes a limiting factor.

Other available feedstocks such as agroforestry, native fruits, plant roots, and weeds were considered a low priority at present.

- ***Action:*** PAMI will concentrate on processing technologies for straw and chaff feedstocks from under utilized traditional crops. PAMI will continue working with traditional feed crops, such as alfalfa, and work with the industry to make improvements where necessary. In the long term, PAMI will monitor trends, and where appropriate, assist frontrunners in the utilization of new feedstocks.

Markets

Consumer Profiles: The "green" movement is a major driver of crop utilization efforts, demanding replacement materials for products that are now made from trees or plastics. This trend is expected to grow. The European marketplace, where regulation dictates or consumers choose to pay a premium for products made from materials other than trees or plastic, is leading the green movement. The European consumer is more sophisticated and demanding than the North American consumer. Although this is slowly changing, present day North American consumers generally won't pay a premium for tree-free paper (for instance), since most products made from plastics and trees are presently the less expensive.

Demographics: The aging baby boom generation in North American society holds the majority of financial resources. Globally, the world standard of living is improving, leading to higher meat consumption and a resulting demand for more feed and plant protein. The economic outlook for the present day feed mill is negative, as more animal enterprises can make their own standard feed at less cost than the large-scale feed mill.

Market Needs: There will be more demand for adhesives and resins derived from plant material. Increased aquaculture will demand more specialty feeds, and there will be greater demands for formulated feeds for all types of animals. In some cases, technology may advance so far and so fast that it may make present processes obsolete immediately.

New products should initially target niche markets rather than competing with high volume commodity products, such as 4 x 8 ft. sheets of standard fibreboard. Synergies may allow processors to integrate their business with livestock enterprises. There is, or soon will be, a shortage of new white fibre (i.e. from trees) to meet increasing demands for paper production. Fibre needs for paper production will present opportunities for straw-based paper.

- ***Action:*** Marketplace needs for the feed and fibre products identified will drive R&D demands. PAMI will partner with industry and government and use the CPDC to help develop new products to meet these needs.

Process Opportunities

Process and process related activities PAMI could get involved in are numerous:

- ***Size reduction (milling, cutting, grinding)***
- ***Cleaning (washing, contaminant removal)***
- ***Sorting (screening, grading, classification)***
- ***Drying***
- ***Decortication (separation of various fibrous components)***

- *Conditioning (re-wetting, temperature conditioning)*
- *Blending*
- *Extrusion (high temperature, high pressure forming)*
- *Colour sorting (classification of materials by colour)*
- *Densification (cubing, pelleting)*
- *Others*

Other process related, value-added activities include:

- *Transportation*
- *Storage*

Of these activities, the ones that require significant development and offer a best-fit with CPDC capabilities include:

- *Transportation*
- *Storage*
- *Size reduction*
- *Drying*
- *Initial classification of straw and other feedstocks*

Industry specific opportunities include:

- *Strawboard manufacturers seeking ways to make feedstock straw that is consistent in size, moisture content and quality.*
- *Processing plants looking for "zero effluent" technologies, a concept that returns all the by-products of manufacturing, including dust, into the final product.*
- *Alfalfa processors seeking improvements to their final product by feeding their machinery a more consistent feedstock.*

Strategic Recommendations:

The group made several recommendations to PAMI regarding processes to pursue:

- Equipment acquired by PAMI should be versatile, allowing use on different feedstocks in different ways.
- Fill the technology gap between inventor and entrepreneur by helping to scale-up new ideas to production levels.
- Consider some wet processing equipment in the future.
- Emphasize field processing in cases where the by-product is not required.
- Consider other ways of harvesting crops that increase the quality or quantity of straw or forage.
- Investigate extrusion as a process employed by the feed industry (and other industries) in the future.
- Consider sorting methods other than traditional grain cleaning, such as sorting alfalfa leaves and stems or sorting the nodes out of straw.

Additional related recommendations included:

- Avoid duplicating services that exist elsewhere.
- Add an economic component to testing.
- Consider the PAPRICAN model as a means of becoming a learning center for the industry.

- ***Action:*** PAMI will direct its energies toward primary processing opportunities and focus on obtaining equipment for size reduction, densification, and machinery that classifies straw length. Feed making machinery, such as a pelleter and cuber, will also be considered. PAMI will also seek solutions to the storage and transportation issues that surround feed and fibre acquisition.

Champions

Background: *The meeting participants established for PAMI that Governments are key players, and are seen as taking the role of providing dollars for basic research and development to spark the industry. Further, the group indicated that REDA's (rural economic development groups) could provide facilitation, but their broad base of responsibilities may prevent leadership in this context. Large companies could be innovators, but are keen risk managers. They prefer to focus on purchasing and refining new or existing technology, maximizing potential for profitability. The group also suggested the establishment of a one-stop shop at the provincial government level to handle all regulatory requirements for business start-up. All stakeholders should concentrate their efforts on four or five winners.*

Recommendations:

- Ensure the selected Champion is an individual with an established record in leading innovation, or a small group with a vision and a commitment to succeed.
- Identify a facilitator to assist producer groups in positioning themselves as energizers that stimulate research to turn raw feedstocks into value-added products.
- Establish a cooperative to represent the Agro-Fibre industry, and use it to promote product, regulatory, standardization and other research needed by the industry.

- ***Action:*** PAMI will continue networking with governments and industry to identify Champions and advance crops processing research in Saskatchewan. PAMI will also keep abreast of production trends to identify emerging feedstocks and potential value-added uses.

Forum on CPDC Strategy

October 28, 1999

Attendees:

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PAMInews

June, 1998

New: Crops Processing Research Centre at PAMI!

PAMI has succeeded in gaining approval from AFIF (Agri-Food Innovations Fund) to create a non-food Crops Processing Development Centre (CPDC) at our Humboldt site. This new centre will pave the way for the development of techniques, processes, and equipment that will ultimately help our Prairie producers add even more value to the crops and raw commodities produced here.

Although PAMI has been involved in crops processing for some time, the new centre will greatly expand our capabilities.

Projects at the centre will focus on non-food crops processing. Opportunities abound to convert crops and crop by-products to high value products such as home insulation, paper, fillers for plastics, and animal feed supplements.

The Crops Processing Development Centre will be built and operated by the Prairie Agricultural Machinery Institute (PAMI) with the assistance of $1.4 million from the Canada/Saskatchewan Agri-Food Innovation Fund (AFIF). Facility design and equipment procurement is underway, with construction starting in August. The Centre is to be operational in early 1999.

"These products will further contribute to the economic growth of the Prairies and Canada as they find their way into global markets."

-Lyle Vanclief, Minister of Agriculture and Agri-Food Canada.

"There are tremendous opportunities to develop value-added products for the market place, both at home and abroad," said PAMI President David Gullacher. "But we need to

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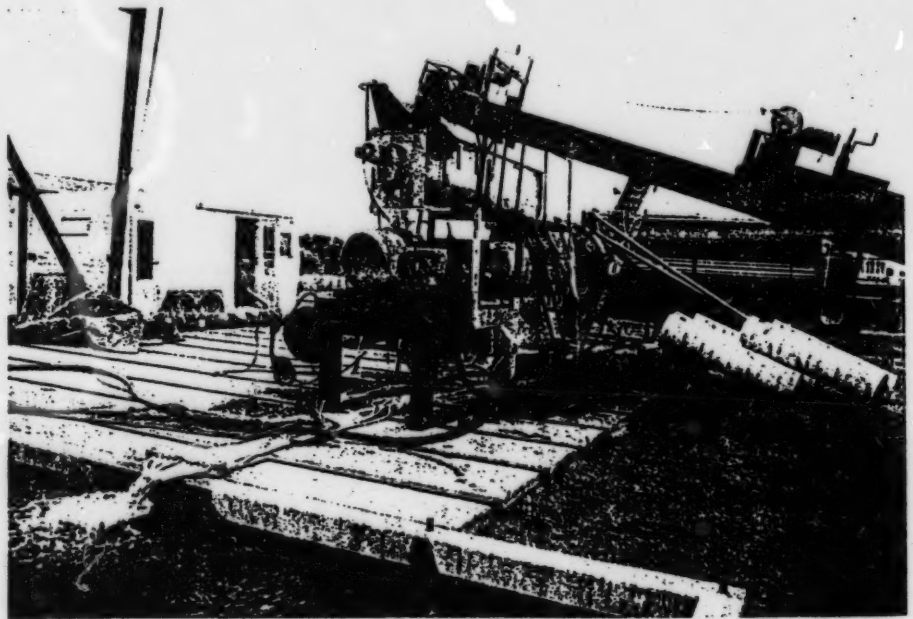

With the new indoor lab created by the Crops Processing Development Centre, outdoor operations like this one will no longer be interrupted by stormy weather.

"This facility will be a center for applied research and development of medium to large-scale non-food crops processing technologies. It will add a new set of tools to PAMI's toolbox of research and development expertise."

-Eric Upshall, Minister of Saskatchewan Agriculture and Food.

develop processing technologies that will add value to the crops already grown here on the Prairies. We're especially targeting agro-fibre and feed processing technologies."

He said that once operational, the new facility will concentrate on engineering and testing.

"In recent years, PAMI engineers have begun providing some development and testing services for processing technologies, but the lack of an indoor laboratory has limited our capabilities during the cold weather season," added Gullacher.

Extracting and refining structural agro-fibre from crops is a growth industry. Recent technology advancements in fibre extraction means that mass-produced materials like plastics, paper, and construction panels can be made from crop fibres.

As a result, a new industry is being built around this development on the Prairies.

"Diversifying our economy through the use of new technologies and by finding new uses for traditional crops will help continue the expansion of Prairie agri-food industries."

-Ralph Goodale, Minister responsible for Saskatchewan in the federal cabinet

Visit the Virtual PAMI at www.pami.ca

A Brief History of Crops Processing at PAMI...

We have already successfully completed projects in several crops processing areas:

- Quinoa processing
- Chaff (densification, transport for ethanol production)
- Cereal straw pulping studies
- Wild rice maturity sorting
- Dehydrated alfalfa product optimization

These projects have given our team valuable experience and insight into material storage, drying, handling, conditioning, transport, size reduction, compaction, sorting, washing, and mixing crop materials.

The CPDC will now provide us with a specialized lab and equipment to conduct more sophisticated applied research and development activities. In the short term we will have access to 600 volt power, enabling us to do projects in a dust free environment, and use steam generation equipment. Long range plans for the facility include specialized pilot plant equipment for drying, freeze-drying, tempering, aeration, fumigation, washing, sorting, handling, fabrication, and data collection and analysis equipment.

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R&D Report

Issue No. Two *April, 1998*

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LEARNING & GROWING...

TALES OF CROPS AND HOGS AND QUALITY

-David Gullacher, President and CEO

It's an exciting time to be an applied research and development organization. The agri-business industry is in a mini-boom phase. A new sense of optimism dominates meetings and conversations wherever I go.

PAMI is now in it's 24th year of service, and early indications suggest a year like we've never seen before. All of our major divisions have projects in the works, with the promise of more to come.

At PAMI, we've never stood still, and we're not planning to start now.

New Crops Processing Development Centre

PAMI has succeeded in gaining approval from AFIF (Agri-Food Innovations Fund) to create a Non-Food Crops Processing Development Centre at our Humboldt site. This new centre will pave the way for the development of techniques, processes, and equipment that will ultimately help our Prairie producers add even more value to the crops and raw commodities produced here. Although PAMI has been involved in crops

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Distant storm clouds threaten to interrupt crops processing research at PAMI's outdoor lab site. With the new Crops Processing Development Centre, PAMI staff will no longer be at the mercy of the rain, wind, snow, and cold.

Welcome to the PAMI R&D Report!

We've worked hard at developing a newsletter to keep in touch with our valued clients in agriculture and industry, and hope you will find it helpful and informative.

If you wish to be removed from our mailing list, please call our toll-free number and ask for Carol Jackson (ext. 246). She will remove your name from our list.

Or, if you know someone that might find this newsletter helpful, please forward it to them using the forwarding box below, or simply give Carol their contact details.

Comments and questions can be directed to Dan Dyck, editor, (contact information below, or at ddyck@pami.ca)

Please call us if you have comments or suggestions!

1-800-567-7264

Please forward to:

- _____
- _____

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processing for some time, the new centre will greatly expand our capabilities.

Projects at the centre will focus on non-food crops processing. Opportunities abound to convert crops and crop by-products to high value animal feed, fibre, and fractionated products that allow us to add value to our commodities.

Hogs, Hogs, Hogs

Both Manitoba and Saskatchewan are setting their sites on becoming high quality, intensive hog production regions. Both provinces are committing themselves to significant growth in hog production—a good fit given the capacity to grow feed on the Prairies.

PAMI has been at the forefront of providing the ways and means for this transition to minimize impact of offensive odours and maximize the value of hog manure as fertilizer. Since 1991, we've conducted over 19 projects and published numerous reports investigating these issues, and created solutions at the production level.

This work has laid an invaluable foundation for producer boards and hog marketing agencies. Interest in just one aspect of this work—manure odour control techniques pioneered by PAMI—has spanned Canada and the USA.

ISO 9002 on the Horizon

When you're in the testing business, its extremely important for clients to know that instruments are calibrated to known standards, and that test results can be trusted.

That's why we've been busy building a quality management system. Soon we will have a method of tracking what we have always done—provide clients with top notch technical services. With accreditation only months away, PAMI will be among the first organizations of its kind to ensure clients that all projects are conducted according to a documented and recognized quality plan.

PAMI's New Worldwide Web Site—www.pami.ca

Researchers, manufacturers, and producers now have access to PAMI from the nearest internet equipped computer. It's the first time our information resources have truly 'gone global'.

The traffic to our site is increasing daily, and we're pleased with the response our specialized web site has been getting.

Core Investment

Over the years PAMI has built a core of resources represented by over $7 million in specialized equipment and thirty-five (plus) dedicated staff.

Western Canada has a superior network of agricultural leaders and producer groups. Their vision coupled with our strengths in field production, technical development, market research, and value-added processing technology can play a role in shaping the future of agriculture on the Prairies.

I'm also grateful for the government leaders and support PAMI has received over the years. This continues to contribute to success stories in both Saskatchewan and Manitoba.

Our relationship with private industry through associations like PIMA (Prairie Implement Manufacturers Association), AMEC (Alliance of Manufacturers and Exporters of Canada), and many independent relationships has helped bring new technologies and developments to the Prairies.

All these activities mate with our core strengths to position us well for the future. There's no looking back.

David Gullacher brings his experience in the manufacturing sector to his role as PAMI President/ CEO. David holds a B.E. in Mechanical Engineering from the University of Saskatchewan and has also completed training in communications, technical writing, public speaking and human relations, management and leadership, and project management.

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